

WHAT IS CLAIMED IS:

1. An apparatus for heating a green tire by generating heat to a metal member embedded in the green tire using electromagnetic induction, comprising:

a local heating coil for forming high frequency magnetic field along a portion of extending direction of said metal member;

a high frequency power supply for supplying high frequency power to said local heating coil; and

moving means for moving said local heating coil relatively in the extending direction of said metal member.

2. The apparatus for heating a green tire according to claim 1, wherein said local heating coil forms high frequency magnetic field along a portion of facial direction of a ring-belt-shaped metal member embedded in a tread portion of said green tire.

3. The apparatus for heating a green tire according to claim 1, wherein said local heating coil forms high frequency magnetic field along a portion of peripheral direction of a wire-ring-shaped metal member embedded in a tread portion of said green tire.

4. The apparatus for heating a green tire according to claim 2, wherein said local heating coil comprises a center core, a side core and a coil, at least one of said center core, said core and said coil have a deformed portion, and said deformed portion is formed so as to concentrate high frequency magnetic field to said tread portion or a shoulder portion continued from said tread portion.

5. The apparatus for heating a green tire according to claim 4, wherein said center core is formed as a curved surface or stepped shape so as to follow a periphery of said green tire.

6. The apparatus for heating a green tire according to claim 2, wherein said local heating coil is installed apart in a width direction of said tread portion and is constructed to have installation interval variable in response to the green tire size.

7. The apparatus for heating a green tire according to claim 3, wherein said local heating coil comprises a spiral coil and a core arranged on a side of said spiral coil.

8. The apparatus for heating a green tire according to claim 7, wherein said spiral coil has an approximately elliptical shape following said wire-ring-shaped metal member and said core has a square shape following said wire-ring-shaped metal member.

9. The apparatus for heating a green tire according to claim 1, wherein said moving means is a rotational driving mechanism for rotating said green tire about a center axis thereof.

10. The apparatus for heating a green tire according to claim 9, wherein said local heating coil is placed between a pair of green tires so that it can heat said pair of green tires simultaneously.

11. The apparatus for heating a green tire according to claim 1, wherein said local heating coil is provided so as to heat one green tire, and a ferrite core is disposed opposite to said green tire with respect to said local heating

coil.

12. The apparatus for heating a green tire according to claim 4, further comprises an auxiliary core, said auxiliary core being disposed so as to raise the density of the high frequency magnetic field of said shoulder portion in a high precision.

13. An apparatus for heating a green tire by generating heat to a metal member embedded in the green tire using electromagnetic induction, comprising:

a heating coil for forming high frequency magnetic field along a portion of an extending direction of said metal member, said heating coil being constructed to be insertable through a tire hole of said green tire; and

a high frequency power supply for supplying high frequency power to said heating coil,

wherein said heating coil is disposed so that both ends thereof are positioned in the vicinity of both bead portions of said green tire.

14. An apparatus for heating a green tire by generating heat to a metal member embedded in the green tire using electromagnetic induction, comprising:

a heating coil for forming high frequency magnetic field along a portion of an extending direction of said metal member;

a high frequency power supply for supplying high frequency power to said heating coil, and

a magnetic material member for inducing high frequency magnetic field formed by said heating coil to said metal member.

15. An apparatus for heating a green tire by generating heat to a metal

member embedded in the green tire using electromagnetic induction, comprising:

a heating coil for forming high frequency magnetic field along a portion of an extending direction of said metal member;

a high frequency power supply for supplying high frequency power to said heating coil, and

frequency changing means for changing the frequency to be supplied by said high frequency power supply.

16. The apparatus for heating a green tire according to claim 15, further comprising a condenser for causing a resonance current to said heating coil.

17. The apparatus for heating a green tire according to claim 16, further comprising a voltage detector for detecting voltage applied to both ends of said condenser, wherein said frequency changing means controls the frequency of power to be supplied by said high frequency power supply on the basis of voltage value detected by said voltage detector.

18. An apparatus for heating a green tire by generating heat to a metal member embedded in the green tire using electromagnetic induction, comprising:

a heating coil for forming high frequency magnetic field along a portion of an extending direction of said metal member;

a high frequency power supply for supplying high frequency power to said heating coil, and

relative distance adjusting means which is capable of adjusting the distance between said heating coil and said metal member.

19. The apparatus for heating a green tire according to any one of claims

1, 13, 14, 15 and 18, wherein the apparatus for heating is preheating apparatus to be adapted to a preheating process before the green tire enters into a green tire vulcanizing apparatus.